Testimony of

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Committee on Homeland Security

"*Preventing Terrorist Attacks on America's Chemical Facilities*"

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Chairman Lungren and Members of the Subcommittee, my name is Marty Durbin, and I am the Managing Director for Security & Operations for the American Chemistry Council (ACC). I thank you for this opportunity to speak today on behalf of the Council's members on the important subject of security in the business of chemistry, a critical sector of America's infrastructure.

The 132 members of the ACC manufacture essential life-saving products critical to homeland security and life-enhancing everyday items that keep the economy moving. Our products are critical to daily life and crucial to efforts to combat the war on terrorism. We are essential to making Kevlar vests, night vision goggles and stealth aircraft. The products we manufacture are essential to the things that make modern life possible, from plastics to pharmaceuticals, from cars to clothing. And the products of chemistry are critical in many aspects of American life, including keeping our drinking water safe, supporting agriculture, and spurring medical innovations to prevent and treat disease.

ACC represents the leading companies in the U.S. chemical manufacturing sector, an industry which is the largest exporting sector in the economy ($91 billion), and employs one million people in America alone, with $460 billion in sales. Our members are responsible for nearly 90% of basic industrial chemical production. In addition, the U.S. chemical industry has the largest share of knowledge workers of any industry, and it is the largest private industry investor in research and development.

Mr. Chairman, I welcome the opportunity to highlight four things for you and the subcommittee:

1. The leadership role ACC members have taken – at a cost of over $2 billion since 9/11 – to further ensure the safety and security of their products, their facilities, their supply chain and the communities in which they operate;

2. The great strides the federal government has taken, in cooperation with the chemical sector, to secure the industry;

3. The need for national legislation to provide an appropriate federal regulatory role in chemical facility security; and

4. Our views on the important and frequently misunderstood subject of inherent safety.

I. ACC Has Taken a Leadership Role in Enhancing Chemical Security

Even before September 11, 2001, Council members had begun to address the challenge of terrorist threats to our operations, by developing site security guidelines for chemical companies. Our Board of Directors was actually meeting that sad day, and their reaction to those events was swift and decisive. We quickly completed and issued our security guidelines, and a companion set of transportation security guidelines, in October and November of that year.

In those uncertain months, we shared those guidelines with state and federal agencies, and we and OSHA posted them on our public websites to make them as broadly available as possible. We also partnered with EPA to hold regional security briefings for our members and other chemical companies, state and local government officials, and first responders.

In January 2002, our Board launched an aggressive effort to develop a new Responsible Care® Security Code. Now in its 17th year, Responsible Care® is ACC's signature program of ethical principles and management systems designed to continuously improve our members' safety, health and environmental performance -- and now, their security performance as well. Implementation of Responsible Care® is mandatory for all members of the American Chemistry Council, as well as Responsible Care Partner companies, who represent chemical carriers, warehouses, logistics planners and others along the supply/value chain. In developing the Security Code, we consulted closely with plant-level Community Advisory Panels, and with first responders and government agencies at all levels. In June 2002, the Board adopted the Security Code.

The Security Code, and ACC members' security enhancements, has been widely and uniformly acknowledged, from the *Washington Post* editorial page[1] to Government Accountability Office reports.[2] Former Homeland Security Secretary Ridge has referred to it as a "model program." The State of New Jersey has recognized the Code as a "best practice" for chemical facility security. In addition, the City of Baltimore adopted a security ordinance that recognizes the Code as an alternative means of compliance, and Maryland legislation mirrors the Code. At a hearing held April 27, 2005 by the Senate Homeland Security & Governmental Affairs Committee, Chairman Collins declared that companies like ACC's members "should be commended" for the steps they have taken to date voluntarily to secure their facilities. GAO official John Stephenson focused particularly on the substantial work that ACC members have done implementing the Responsible Care® Security Code, stating that "ACC is very good."

The Security Code requires member companies to:

- Prioritize their sites by degree of risk, sorting them into four tiers. This process was begun before the Code was adopted, and every ACC member company completed it on schedule in June 2002.

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[1] "Some of the biggest security gains have been made cheaply, sometimes thanks to unobtrusive, even private-sector initiatives. The 140 large companies that form the American Chemistry Council, for example -- a group with both financial and practical interests in not having their chemical plants blown up -- have created their own security code, internal communications system and inspectorate." *THE WASHINGTON POST*, p. A26 (May 27, 2005).

[2] "To its credit, the chemical industry, led by its industry associations, has undertaken a number of voluntary initiatives to increase security at facilities. For example, the ACC, whose members own or operate 1,000, or about 7 percent, of the facilities [handling large quantities of hazardous materials in the country] requires its members to conduct vulnerability assessments and implement security improvements." GAO, "Homeland Security: Voluntary Initiatives Are Under Way at Chemical Facilities, but the Extent of Security Preparedness is Unknown" (GAO-03-439, March 2003) at "Highlights."

- Thoroughly assess vulnerabilities, using rigorous methodologies developed by Sandia National Labs and the Center for Chemical Process Safety (CCPS), a program of the American Institute of Chemical Engineers (AIChE).
- Implement security enhancements commensurate with risks, and taking into account inherently safer approaches, engineering and administrative controls, and other security, prevention and mitigation measures.
- Verify the implementation of these physical security measures, using third parties that are credible with the local community, such as first responders or law enforcement officials.

All 2,040 ACC member company facilities have completed their vulnerability assessments, and almost all have completed their enhancement verifications. Progress in implementing the Code was verified by GAO in its most recent report on chemical facility security.[3]

Our Security Code is not just limited to physical plant security. It covers the complete "value chain" for chemicals, from suppliers to customers, including transportation. Value chain management is an area where we have a long and successful history of partnering with and supporting federal agencies to prevent the diversion of legitimate and essential chemicals that have the potential to be misused to make illegal drugs or chemical weapons. In fall 2002, the Council issued a detailed value chain guidance document to enhance the security of our products outside the fence line. Our members who also belong to the Chlorine Institute have, together with the Association of American Railroads, implemented a chlorine rail car security plan.

The Security Code also covers cyber security, to protect our highly computerized operations from being attacked electronically. Our members lead a broad Chemical Sector Cybersecurity Information-Sharing Forum to promote cybersecurity in our industry. In spring 2003 the Forum issued a cybersecurity guidance document. The Forum also launched a broad cybersecurity practices, standards and technology initiative through CIDX, the Chemical Industry Data Exchange. All of these guidance materials, and the Security Code, are available through our websites (www.americanchemistry.com and www.rctoolkit.com) so that they can have the broadest possible effect beyond our membership. The CIDX materials are similarly available at www.cidx.org/CyberSecurity/default.asp.

II. The Federal Government, Working with ACC, Has Greatly Enhanced the Security of the Chemical Sector

ACC and its members have worked closely with the Department of Homeland Security during its first two years of existence. We concurred with GAO's recommendations in 2003 that the federal government should develop "a comprehensive national chemical security strategy that is both practical and cost effective," and that should:

[3] Based on work conducted between October 2004 and March 2005, GAO stated: "All 10 of the chemical facilities we visited reported making significant progress in fulfilling the requirements of the security code." GAO, "Protection of Chemical and Water Infrastructure: Federal Requirements, Actions of Selected Facilities, and Remaining Challenges" (GAO-05-327, March 2005), at 5, 37. ACC members' implementation of the Code is discussed in detail at pages 17-21.

- "Identify high-risk facilities based on factors including the level of threat and collect information on industry security preparedness;
- Specify the roles and responsibilities of each federal agency partnering with the chemical industry;
- Develop appropriate information sharing mechanisms; and
- Develop a legislative proposal, in consultation with industry and other appropriate groups, to require these chemical facilities to expeditiously assess their vulnerability to terrorist attacks and, where necessary, require these facilities to take corrective action."[4]

A. Identify High Risk Facilities

Starting in March 2003, DHS partnered with ACC to facilitate visits to our members' facilities. ACC also worked with DHS to develop methods for evaluating facilities based on potential physical and economic consequences. And even before the creation of DHS, the Coast Guard and state offices of homeland security or counterterrorism visited facilities to offer advice on enhancing facility security.

Today, DHS' Protective Security Division (PSD) and the Coast Guard are actively visiting chemical facilities, reviewing vulnerability assessments and security plans, understanding common vulnerabilities and developing plans, in conjunction with local law enforcement and responders, to protect facilities and their communities. Information gained from these visits supports the development of DHS's "Buffer Zone Protection Program" to provide support and resources to local governments in plant communities. ACC is also working closely with PSD to develop, refine and publicize its "Risk Analysis and Management for Critical Asset Protection" (RAMCAP), which allows DHS to compare the vulnerabilities of disparate assets and resources against a series of benchmark threat scenarios. RAMCAP will enable DHS to allocate protective resources rationally, on the basis of risk.

B. Specify the Roles and Responsibilities of Federal Agencies

In December 2003, the President issued Homeland Security Presidential Directive 7, which clearly defines roles for various federal agencies in protecting the nation's critical infrastructure and key resources, and specifically names DHS as the lead or "sector-specific" agency for the chemical sector. With DHS's blessing, ACC organized the Chemical Sector Coordinating Council -- a group of 16 leading trade associations that coordinates communications between DHS and our sector for purposes of infrastructure protection. ACC serves as the administrative secretariat for the Sector Council. This model has proven so attractive to DHS that they are encouraging its adoption by the other critical infrastructure sectors.

The federal Maritime Transportation Security Act (MTSA), which was enacted in late 2002, puts the Coast Guard in charge of regulating security within ports, on vessels, and at

[4] See "Homeland Security" *supra* note 2, at 27.

facilities that have the potential to be involved in a transportation security incident. Roughly 240 chemical plants in the United States -- including most of the largest facilities nationally -- are currently subject to rigorous Coast Guard oversight under the MTSA. These facilities have all conducted security vulnerability assessments, have implemented facility security plans, and have been inspected by the Coast Guard. Facility security plans specify actions the facility will take at different MARSEC (threat) levels regarding access control, restricted areas, handling cargo, delivery of vessel stores and bunkers, monitoring, security incident procedures, and barge fleeting facilities. They also include schedules for employee security training and response drills and exercises. Even more facilities are covered by area (i.e., port) security plans.

ACC supported the MTSA throughout the legislative process and we have worked closely with the Coast Guard to make the law a success. In particular, the U.S. Coast Guard recognized the Responsible Care® Security Code as an Alternative Security Program ("RCSC–ASP") for purposes of fulfilling facility security regulatory requirements under the MTSA. The RCSC—ASP was the first alternative security program the Coast Guard approved for facilities.

C. Develop Appropriate Information Sharing Mechanisms

Effectively securing privately-held infrastructure -- like the business of chemistry -- requires a partnership between the private sector and the government. Within seven months of 9/11, ACC and the FBI created a Chemical Sector Information Sharing and Analysis Center (ISAC) to share security information daily between the federal government and companies that make and use chemicals. The Chemical Sector ISAC provides 24-7 capability for DHS's Homeland Security Operations Center (HSOC) to contact the chemical sector as well as for individual members of the ISAC to convey incident or threat information to DHS. Members of the ISAC receive daily intelligence reports from DHS as well as episodic alerts and warnings. Open to any chemical sector business, whether or not it is a Council member, the ISAC has almost 600 participants. The Council runs the ISAC for free as a public service through its CHEMTREC service,[5] in cooperation with Department of Homeland Security (DHS). It is located at http://chemicalisac.chemtrec.com. ACC is also one of the first critical infrastructure sectors to be piloting DHS's new Homeland Security Information Network – Critical Sectors (HSIN-CS), a set of secure communications and collaboration capabilities. ACC anticipates that the Chemical Sector ISAC will eventually be integrated into HSIN.

On behalf of the chemical sector, ACC recently participated in TopOff 3, the third in a series of congressionally mandated emergency response exercises. TopOff3 was the first such exercise to involve the private sector. ACC's involvement in TopOff 3 helped generate ideas for further improving the Chemical ISAC and added significant value to other signature parts of the exercise. The success of the public – private sector cooperation and coordination during TopOff3 clearly underscored the value of private sector involvement, not only for providing

[5] CHEMTREC® is a 24-hour-a-day emergency communications center that ACC has operated as a public service since 1971. CHEMTREC® provides emergency responders with round-the-clock resources for information and assistance for spills, leaks, fires, explosions and other emergencies involving chemicals and other hazardous materials. CHEMTREC has provided critical information to emergency service workers for incidents ranging from the attacks at both the World Trade Center and the Pentagon to the Columbia space shuttle disaster.

expertise but ensuring that the business impacts of terrorist events and official reactions (or inaction) to such events are considered in both short and long term emergency management planning.

D. Develop a Legislative Proposal

ACC recognizes that not all chemical facilities are currently regulated under the MTSA. We also recognize that not all chemical facilities belong to ACC, and may not have taken the same kinds of aggressive steps that our members have taken -- steps that have cost our members an estimated $2 billion since 9/11.

As a result, ACC has been taking a leadership role at the federal level to ensure that all chemical facilities are secured against the threat of terrorism. We have worked continuously with Congress and the Administration to secure enactment of national security legislation that will:

- Establish national standards for security of chemical facilities;
- Require facilities to conduct vulnerability assessments and implement security plans;
- Provide oversight, inspection, and enforcement authority to DHS.

In the absence of federal action on this vital topic, state legislatures are beginning to fill the vacuum. Both Maryland and New York have enacted chemical facility security laws. ACC was able to support both of these statutes, and is working with the two states' offices of homeland security on their implementation. However, we strongly believe a national program, not a patchwork of potentially conflicting state efforts, is necessary.

Naturally, ACC members feel that federal legislation should respect their substantial voluntary, at-risk expenditures implementing the Responsible Care® Security Code. As GAO's John Stephenson stated at April's Senate hearing: "I would expect that any federal system would give them credit for – indeed, recognize" ACC members' efforts. At the same hearing, Richard Falkenrath, former Deputy Homeland Security Advisor, concurred that these measures were "good," and that ACC member companies deserved "a level playing field" and "a common set of expectations" that all chemical facilities would be required to meet.

III. ACC's Views on Inherent Safety

In legislative and policy debates over chemical security, no issue has proven more controversial than the concept of "inherent safety" and what role it should play. Because of ACC members' deep investment in this issue, I would like to spend the balance of my time explaining our views and why we feel so strongly about them.

The concept of inherent safety was invented by the chemical engineering profession. In fact, it is no exaggeration to say that the business of chemistry, and indeed ACC members, wrote the book on inherent safety. The leading reference on the subject -- *Inherently Safer Chemical*

Processes: A Life Cycle Approach, also known as the "Gold Book" -- was written by nine process safety experts, every one of whom worked for an ACC member company at the time.[6] The concept of inherent safety has been well understood within the process safety community for many years. Basically, it means designing a process to avoid creating a hazard in the first place, rather than trying to control the hazard afterward with add-on protective equipment or procedures.

The business of chemistry has long embraced inherently safer approaches. For over a decade and a half, our Responsible Care® initiative has required ACC members to have mechanisms for reviewing the design and modification of facilities and job tasks, with inherently safer design and material substitution at the top of the hierarchy of controls. This drives our members continually to develop and implement safer processes. We conduct process hazard analyses of our facilities, and those analyses can lead us to change processes, modify procedures, or substitute materials to reduce and manage risks. As I noted earlier, the Responsible Care Security Code mandates that our members take inherently safer approaches into account in assessing possible security measures. As a result, the GAO documented that seven out of the 10 ACC members it visited had made process changes as a part of their security enhancements.[7]

I cannot overemphasize, however, that inherent safety is about reducing *all* the risks potentially associated with a process. Inherent safety typically involves making very challenging risk/benefit judgments to ensure that risks are not unwittingly shifted or substituted, and that overall risks are reduced. Many inherently safer approaches involve trading one risk against the potential of another. For example, advocates of inherent safety frequently speak of reducing onsite inventories, or reducing or eliminating storage, of hazardous materials. By reducing inventories, though, a facility may increase the number of truck shipments through the plant's neighborhood. Similarly, replacing a low temperature, low pressure process that uses a toxic chemical with a process that uses a less toxic chemical, but operates at higher temperatures and pressure, could endanger workers.

Fundamentally, ACC has been dubious of any regulatory initiative that involves government agencies or other third parties reviewing and approving -- or disapproving -- facilities' decisions regarding inherent safety, whether in the context of security or otherwise. The history of "inherently safer" approaches is full of examples of unintended consequences: chlorofluorocarbons, underground storage tanks and PCBs were all originally regarded as inherently safer, from the perspective of fire or explosion. Their possible effects on stratospheric ozone, groundwater or health, however, were not fully appreciated until later.

The challenge to regulators is compounded by the complexity of chemical industry processes. There are no "standard processes" for making chemicals, and "[c]omplex process systems, especially those with a long history of safe performance, should not suddenly be changed without careful thought and consideration."[8] To expect effective regulatory oversight in

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[6] *Inherently Safer Chemical Processes: A Life Cycle Approach* (1996), published by the Center for Chemical Process Safety of the American Institute of Chemical Engineers.

[7] *See* "Protection of Chemical and Water Infrastructure," *supra* note 3, at 21.

[8] David Moore, "Judging Effectiveness of Inherent Safety for Safety and Security of Chemical Facilities," presented at the 20th Annual CCPS International Conference (April 11-13, 2005), at 3.

this area is unrealistic, at least without great difficulty, expense and delay. In fact, in the Clean Air Act Risk Management Program rulemaking, EPA concluded that requiring and reviewing multiple process options at each regulated plant would not lead to greater advances in process safety.[9] In doing so, it recognized that no small, central group of people can be so omniscient as to be able to understand the huge range of issues involved at so many unique facilities.

The challenge facing regulators – and even businesses – is further heightened by that fact that, while the concept of inherent safety is well understood, how to implement that concept is not. One of the nation's leading academics in process safety has declared that "a systematic methodology to measure inherent safety does not exist, and it is not currently possible to know how inherently safe a plant or equipment item is because it is not possible to evaluate the principles that have been applied."[10] Another leading process safety expert concurs: given "the lack of formal and agreed inherent safety approaches . . . [e]xperience has shown that regulators and industry have a difficult time interpreting inherent safety and agreeing on adequacy of efforts."[11] This is not to say that such methodologies cannot be developed – they should, and ACC supports efforts to do so. But even if agreement on methods is achieved, leading process safety experts discount the feasibility of using them in a regulatory system: "[T]he complexity of process plants essentially prevents any prescriptive rules that would be widely applicable."[12]

Witnesses at April's Senate hearing agreed on the importance of legislation "focus[ing] tightly" on security and not becoming a "back door" way of addressing "extraneous" issues. Dr. Falkenrath maintained that the government should not have the power to order hazard reduction measures to be taken. Mr. Stephenson agreed, adding that many types of chemicals and chemical processes do not lend themselves to such approaches without massive capital expenditures, and that, in general, facilities using or storing such chemicals can make such changes more easily than manufacturing facilities.

In the final analysis, ACC firmly believes that judgments about inherent safety are fundamentally process safety decisions that must ultimately be left to the process safety professionals. We will remain concerned about legislation that would enable government officials focused on security to second-guess process safety decisions.

V. Conclusion

In closing, I want to reiterate our commitments. Our member companies are committed to doing all they reasonably can to enhance the security of their operations and products against those who would do us harm. But we know that our nation will not be safe until all chemical facilities that need to be protected have taken steps equivalent to those taken by our members.

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[9] *See* 61 Fed. Reg. 31699 (June 20, 1996). Dr. Falkenrath testified before the Senate in April that he "disagrees" with those who would try to accomplish the goals of federal chemical security legislation through existing authority under the Clean Air Act's general duty clause, adding that it would be "politically imprudent" to accomplish such a significant intervention in the economy via such an indirect and imprecise mechanism.

[10] Sam Mannan, White Paper, "Challenges in Implementing Inherent Safety Principles in New and Existing Chemical Processes" (2002). Dr. Mannan is Director of the Mary Kay O'Connor Process Safety Center at Texas A&M University.

[11] David Moore, *supra* note 8, at 1.

[12] Mannan White Paper, *supra* note 10, at 6.

It has been over three and a half years since 9/11. It is time to act, and we welcome this hearing. We are committed to working with you and others to see that legislation is enacted in this session of Congress. Thank you, and I'd be happy to answer any questions.